HUMAN BURIALS FROM THE BAPTISM SITE PROJECT

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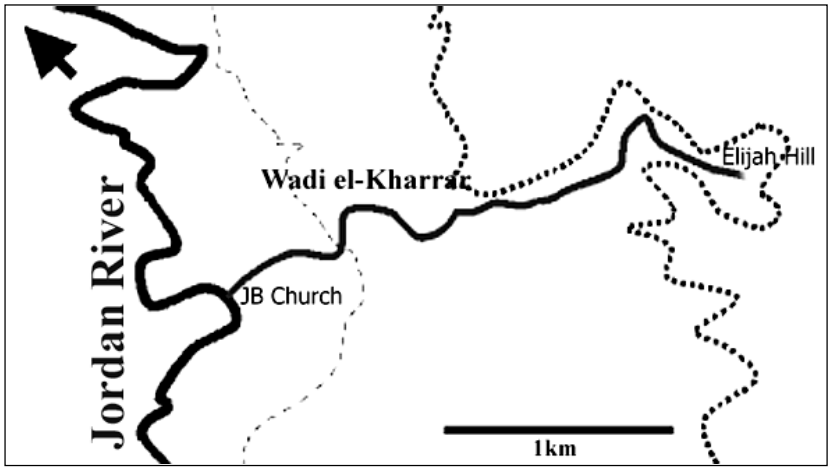
Introduction

Since 1997 the Baptism Site Project has carried out excavations for the Department of Antiquities of Jordan at a number of sites along the Wādī al-Kharrār in the Jordan Valley, from Elijah Hill to the Jordan River (**Fig. 1**). The present report documents the excavation and partial analysis by the author[1] between the summer of 1998 and 2001 of the human burials found along the wadi. Though preliminary, this report provides some interesting results on the burials and human skeletal material, most of which is now inaccessible. For archaeological details on the sites, the reader is referred to reports in the Annual of the Department of Antiquities of Jordan (*ADAJ*) and elsewhere by M. Waheeb and R. Mkhijian.

The Elijah Hill Burial

A small niche hewn in the soft limestone was discovered in August 1998 on the western terrace of the so-called Elijah Hill, about two meters south-west of the Rhetorius Church (Area A Square C2) and 10-30 cm below what may have been a destroyed mosaic floor. The subrectangular feature had maximum dimensions of 54 cm x 29 cm and a maximum depth of 21 cm. It was sealed by a limestone slab, 58 cm x 43 cm and 10 cm thick. In the layer above the niche, and in the same general vicinity, a number of white and coloured *tesserae* (10-15 mm), glass fragments and an Umayyad bronze coin (actually a modified Byzantine *filos*) were found. On the eastern side of the niche was a jumble of human and animal bones. The niche had been opened prior to excavation by some curious workers, which allowed earth to trickle into the burial. The bones included an incomplete human cranium surrounded by four fragments of mammalian bone, including two reddish pelvic fragments, possibly of pig or wild boar, a horse or cattle phalanx and a metatarsal[2]. A detached human maxilla, small cranial fragments and seven teeth were found around the



1. The two major sites on Wādī al-Kharrār.

1. The author is a physical anthropologist with the Department of Antiquities of Jordan and a member of the Baptism Site Project.
2. No zooarchaeological report is available.

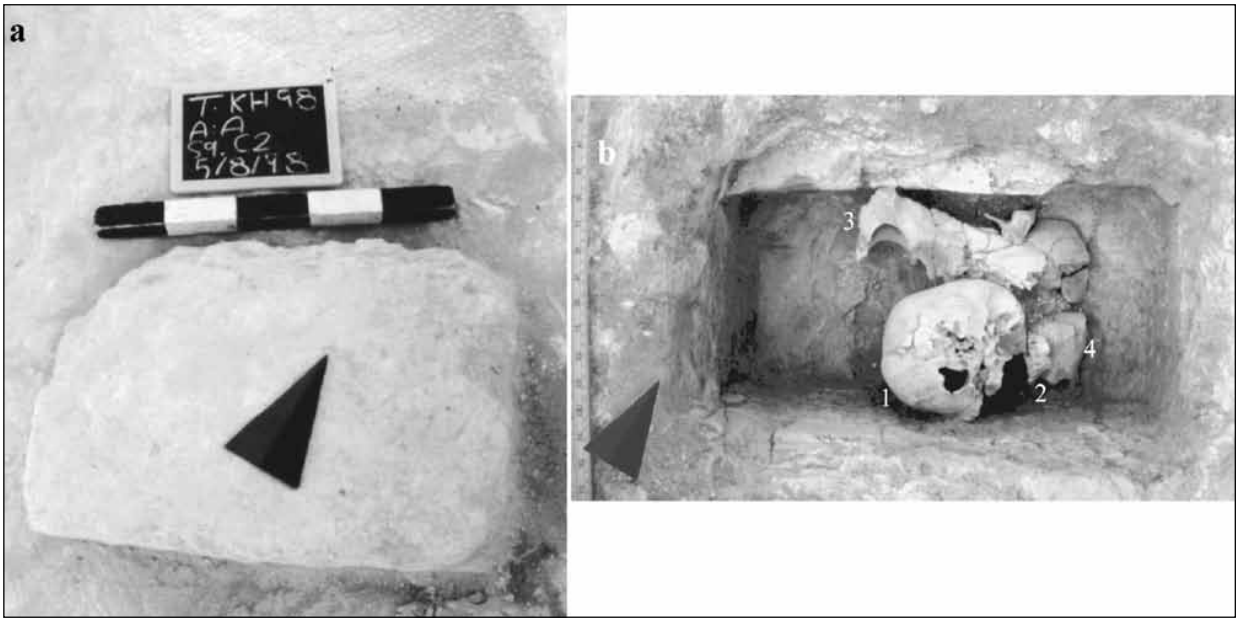
animal metatarsal (**Fig. 2**).

All the human bones belonged to a single individual (Bapt-006). The material is in relatively good condition and whitish in colour owing to mineralization. The cranium was missing most of its facial parts (i.e. zygomatic arc and nasal bones) except for the detached maxilla that was missing four incisors and three molars. Some small cranial elements were partly reconstructed on the skull base. The ends of both mastoid processes were slightly flattened, possibly due to contact with the sealing stone slab. The prominence in the glabellar and supraorbital area, the orbital shape combined with blunt upper ridges, the elongated frontal bone profile, the robust occipital fraction with a strongly expressed linea nuchae and the relatively long mastoid processes, all suggest that the cranium of Bapt-006 belonged to a male individual (Szilvássy 1988). The unerupted 3rd molar on both maxillary sides, together with almost absent or minimal teeth wear, allowed for an estimated age at death of 18-22 years (Sjøvold 1988).

The craniometric measurements (according to Bass 1971; Bräuer 1988; White and Folkens 1991) reflect robustness, particularly in the breadth measurements (**Table 1**), and a more rounded and less elongated mesocephalic cranium (cephalic index = 77.13). A number of non-metric (epigenetic) traits were observed on the skull. These included the presence of a complete metopic suture dividing the frontal bone into two parts, strongly expressed cranial sutures-particularly the lateral side of the coronal and sagittal sutures (grade 4), a bilateral median supra-orbital notch with a median orbital foramen on the right, medium expressed bilateral frontal grooves, parietal foramen (2 mm) on the right, a bilaterally lightly expressed squamo-mastoid suture, bilateral mastoid foramen and 3 lambdoid ossicles (*ca*. 15 mm diameter,) two on the right side and one on the left.

On the external surface of the frontal bone, two linear depressions, about 25 mm in length and more than 1 mm in depth, were observed on the right lateral side. Three lighter and shorter depressions were on the left side. These could be depressed fractures that could have resulted from face-to-face confrontation (Aufderheide and Rodrigez-Martine 1998: 24) and are less likely to be normal anatomical variants (**Fig. 3**). The only other pathological features observed included bilateral light porosity on the outer surface of the temporal bone around the external ear area (porous acusticus externa) and minimal tooth wear, except for minor calculus deposits.

It is evident that the niche represented a secondary burial place. The bones were already



2. Compartment found near the Rhetorius Church: (a) covering stone, (b) opened compartment, including human skull (1) with detached upper jaw (2) animal pelvic bones (3) and fragment of tarsal bone (4) large animal phalanx is below the skull (photograph AN).

Table 1: Anthropometric measurements (mm) and indices (base 100).

Bapt-006 measurements*	**Value**	**Bapt-001 measurements**	**Value (R / L)**
1 Max cranial length (g-op)	188	46 Bimaxillary breadth (zm-zm)	110
2 Glabello-inion length (g-i)	178	48 Nasoalveolar height (n-pr)	88
3 Glabello-lambda length (g-l)	182	**Post cranial bones**	
5 Basion-nasion length (ba-n)	103	1 Humerus total length	456 / -
6a Basion-hormion length (ba-ho)	29	5 Humerus max midshaft diam	25 / 27
7 Foramen magnum length (ba-o)	34	10 Humerus longt head diam	50 / 51
8 Max cranial breadth (eu-eu)	145	1 Radius max length	- / 236
9 Min frontal breadth (ft-ft)	106	1 Ulna max length	268 / 264
10 Max frontal breadth (co-co)	124	11 Ulna dorso-ventral shaft diam	19 / 18
11 Biauricular breadth (au-au)	129	1 Femur max length	457 / -
12 Biasterionic breadth (ast-ast)	113	6 Femur ant post diam	31 / 30
13 Mastoid breadth (ms-ms)	118	19 Femoral head transv diam	50 / 50
14 Min cranium breadth (it-it)	70	1 Tibia max length	370 / 368
16 Foramen magnum breadth	31	8 Tibia midshaft diam	33 / 34
17 Basi-bregmatic height (ba-b)	132	1 Fibula max length	366 / -
17(1) Basion-vertex height (ba-v)	135	2 Fibula max midshaft diam	15 / 15
25 Total sagittal arc (n-o)	382		
26 Frontal longitudinal arc (n-b)	115		
26a Glabella-bregma arc (g-b)	113		
27 Parietal longitudinal arc (b-l)	142		
28 Occipital sagittal arc (l-o)	125		
29 Frontal sagittal chord (n-b)	107		
30 Parietal sagittal chord (b-l)	122		
31 Occipital sagittal chord (l-o)	95		
Indices			
I1 Cephalic (I)=8/1*100	77.13		
I2 Vertical (I)=17/1*100	70.21		
I3 Transverso-vertical (I)=17/8*100	91.03		
I13 T. Frontoparietal (I)=9/8*100	73.10		
I14 T. Parieto-occipital (I)=12/8*100	77.93		

* With reference to the measurements defined by Martin and revised by Bräuer (1988).

mineralized prior to their deposition, indicating that they are some centuries older than the adjacent 6th to 7th century AD church. The inclusion of animal bones makes it less probable that the niche was associated in any way with the church. So far, there are no reports involving animal bone insertions in Christian Byzantine burials, except for reported cases of sheep or goat teeth found placed on the covering stones of tombs in the Blachiya Byzantine cemetery at Gaza (Nabulsi *et al*. 2010). Therefore the niche, found 10-30 cm below a mosaic floor, must be

earlier than the Christian constructions on Elijah Hill. Toynbee (1971) has noted that pigs were buried to legitimise Roman tombs or burial places. In his summary of early archaeological activities in Wādī al-Kharrār, Kopp (1959: 164-5) states that at least five Roman cave tombs, mostly intact human burials, were found on the slopes of the hill. The remains of 50 to 100 houses and associated artefacts were found in the wadi and were dated to the 1st century BC / AD. It is therefore likely that some other cave tombs were either re-used by monks (Kopp 1959: 165) or integrated within later constructions. This and the mineralized state of the bones tend to support the supposition that the niche and its contents predate all 'Christian' features found on Elijah Hill.

Burials at the John the Baptist Church Site

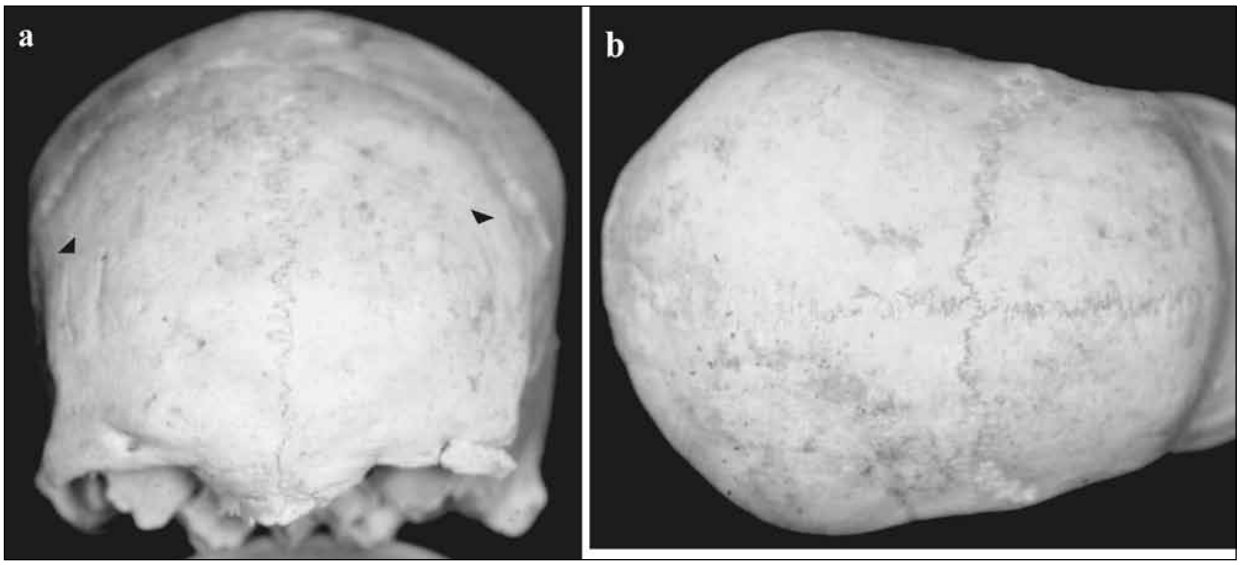
This site represents a complex of ancient structures, mainly churches, located south-east of Wādī al-Kharrār just before it flows into the Jordan River (**Fig. 1**). The 2000 excavation season resulted in the discovery of two intact human burials, or Tombs 1 and 2. The first was a single burial while the second involved multiple burials.

Excavation of the human burials was undertaken between May and September 2000. The bones were in a very fragile and deteriorated state, which called for specific treatment with a 1:4 diluted solution of water-soluble glue (Ponal™). This was applied with a soft brush to the cleaned bone surfaces. The method succeeded in preserving the bones but led to glistening bone surfaces that caused photographic problems. The skeletons were removed in blocks with the surrounding earth supporting them. Wrapped in newspaper sheets, these blocks were stored indoors and left to dry for a few months. The bone material was then clean brushed. Limited reconstructions from bone fragments were carried out in preparation for analysis.

Tomb 1 of Church 3

The tomb was discovered outside John the Baptist church 3, near the western wall at the same height as the so-called Mary's Room. The tomb had a simply built rectangular burial chamber made of a single row of natural flat and rough-cut stones arranged in a U-shape aligned perpendicular to the wall. Stones marking the western end were lost during the removal of debris around the tomb. The burial cyst was 190 cm x 80 cm, approximately 170 cm below the top of the wall and about 3 m below the modern surface level. It was partly placed on a foundation pillar (*ca* 1 m x 1 m) from an earlier construction phase. The small stones used to close the burial chamber had collapsed inwards.

Fragments of a black ceramic vase were collected from the burial chamber filling. The chamber contained the remains of single indi-

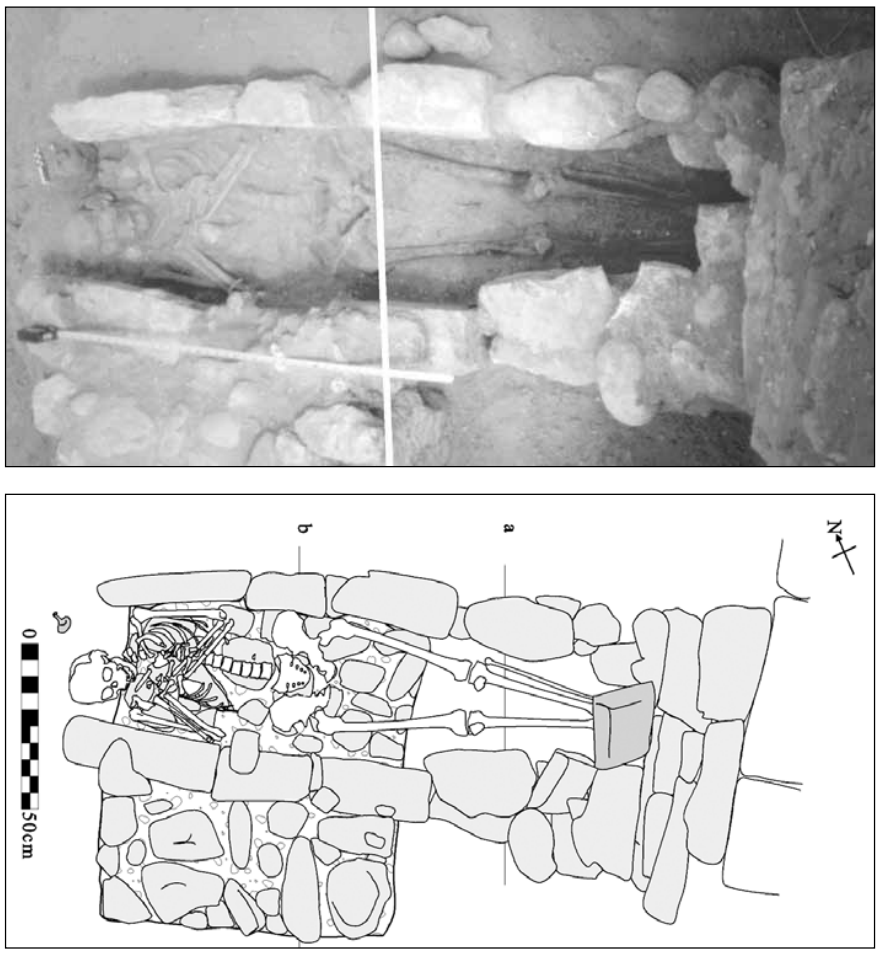


3. The skull of Bapt-006 revealing the complete metopic suture a) Cranial frontal view: the arrows indicate the location linear depressions that could be healed depressed fractures. b) Cranial top view: The "Cross" shape of the Cranial sutures.

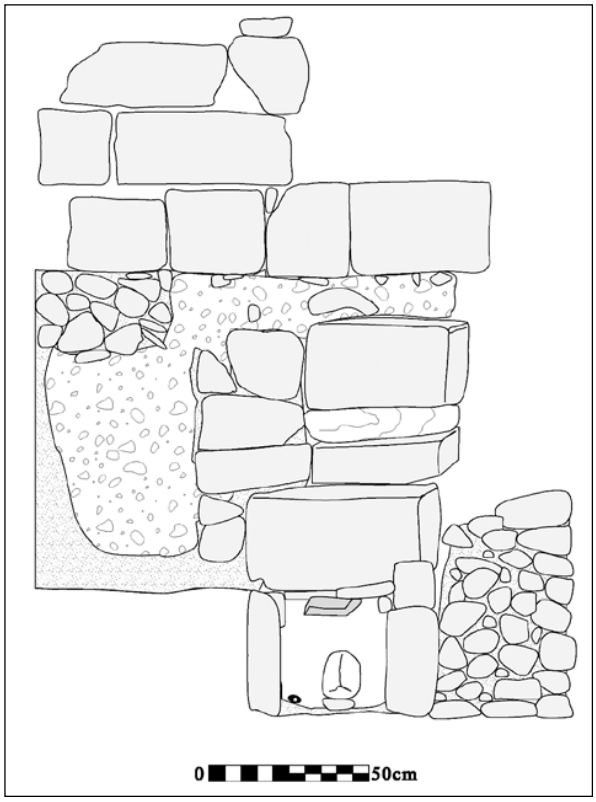
vidual buried in a fully extended position and orientated west to east with a 15° deviation to the south (as does the tomb itself and the whole church) (**Figs. 4 and 5**). The arms were placed over the chest, right hand over the left. The skull was elevated by a small stone below it. The face was lowered and turned in a south-west direction. On the left side and just above the skull a broken dark green glass goblet was found. The base of the burial had a slight east-west slope and was prepared with a relatively thin earth layer.

Though Tomb 1 was an intact single burial, excavated as described above, only about 80% of the skeletal remains (Bapt-001) were accounted for, primarily due to decay of the long bone joints, the pelvic and pectoral girdles, the vertebral arches and the loss of small hand and feet bones. The bones had a dark brown to reddish colour as a result of iron oxides in surrounding clay layer.

Observations made during excavation and macroscopic analysis of the Bapt-001 material revealed the prominence of the frontal glabellar and arcus super cilliaris areas, semi-rectangular and blunt-edged orbital margins, a relatively long mastoid process and a robust mandibular bone, as well as a general robustness of the long bones and a narrow greater sciatic notch and sub-pubic angle, all indicating that Bapt-001was a male. Tooth wear and the medial surface of the pubic symphysis, allowed an estimated age at death of 40-50 years. Some osteometric measurements were carried out on postcranial elements, most of which were reconstructed (**Table 1**). Cranial measurements were not possible owing to fragmentation, although a few were taken *in situ* and are thus unreliable. The observed epigenetic traits included the presence of a supranasal suture, bilateral supraorbital lateral and median (notch on the left) foramen, bilateral squamo-mastoid suture, asymmetry of



4. Top view of Tomb-1 Found in "John the Baptist Church" (Top are edited pictures).



5. Front view of Tomb-1.

the ventral vertebral arch of the axis, ponticulus atlantis of the first cervical vertebra (posterior right incomplete, left complete), 3 sternal foramen, 11 thoracic and 6 lumber vertebra (instead of 12 and 5 respectively), ankeloses between the medial and proximal phalanges and between the sternal body and xiphoid, the absence of costal pits on Th9 (right only) and Th10 (post-cranial anatomic variations cf. Brossmann *et al*. 2001).

Nearly all available teeth showed calculus with subsequent paradontitis and paradontosis. Eight of the 29 teeth had caries, mostly on the occlusal plane; four of these cases were advanced (grade 5-6) so that the pulp canals were opened, resulting in apical abscesses. Two other abscesses were observed on both 2nd left molars (all pathological classifications according to Schultz 1988).

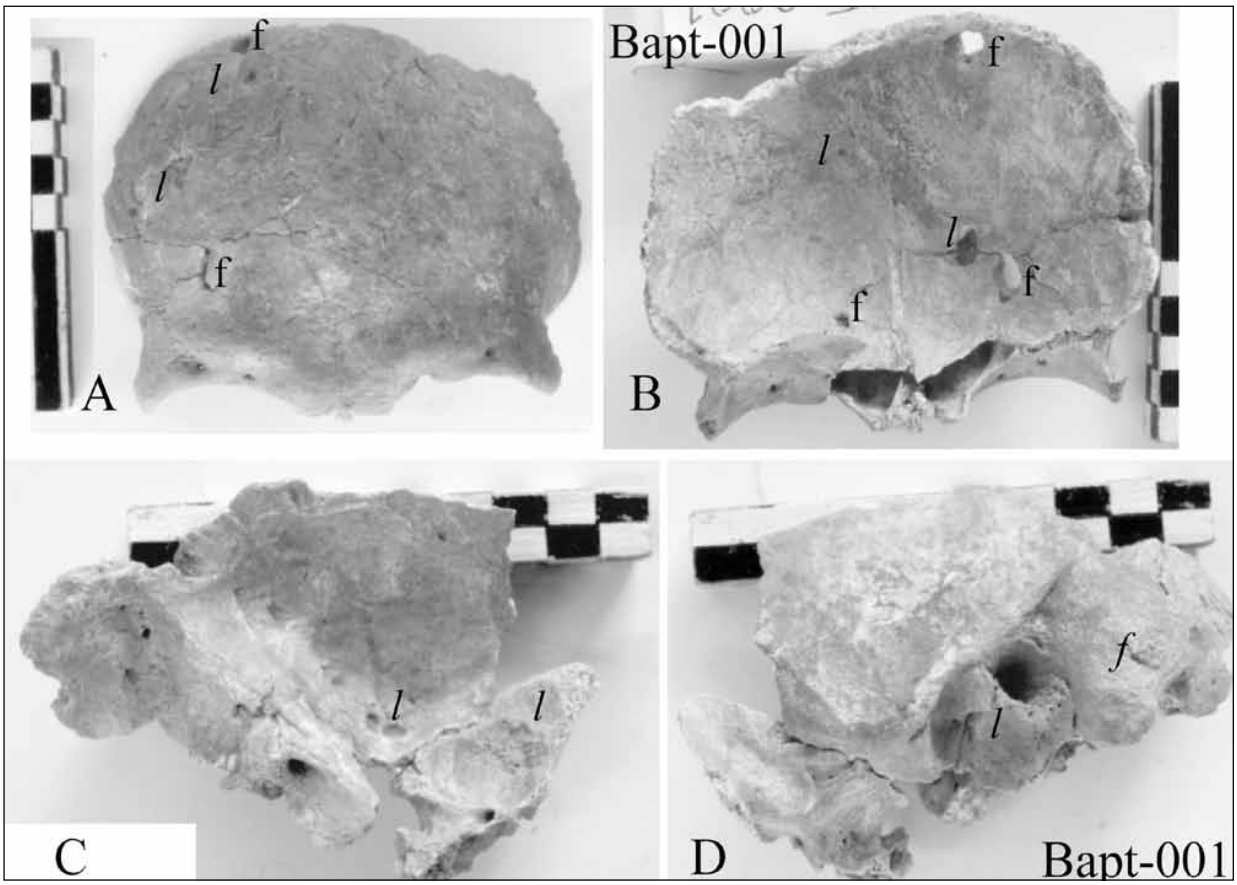
The most obvious pathological features were on the cranial bones. The inner (lamina interna) and outer (lamina externa) surfaces of the frontal, temporal and occipital bones revealed multiple lesions of variable size (3-10 mm) with smooth sclerotic borders. Some lesions extended into the diploe and developed fistulae that penetrated from one laminar side to the other (**Fig. 6**). The lamina interna of the right mastoid was completely eroded. The mastoid was opened in a 3 cm wide area with a sclerotic outer surface. The whole inner surface of the temporal bone showed proliferation of newly formed bone. The parietal bones were fragmentary and incomplete, which did not provide any further details on the nature of the observed defects. Unfortunately, neither X-ray nor histology was available, but the macroscopic aspect of the pathology suggested that an infection had probably led to the bilateral mastioditis (see Flohr and Schultz 2009) that extended to the skull base. The basal meningitis that resulted was thus lethal.

Degenerative joint diseases were less than expected for the estimated age of Bapt-001. The available joints revealed low grade values (1-2) except for part of the coastal notches I-III on the left sternal side, patella and two hand bones (grade 3-4). This may necessitate reducing the estimated age at death for Bapt-001 to 35-45 years. Other observed pathological features included Schmorl's nodes on the Th4 to Th11 and L1 to L6 vertebrae, osteophytic outgrowths on the lumber vertebrae and osteochondrosis between the left I metatarsal and I proximal phalange.

The orientation of Tomb 1 and positioning of Bapt-001 suggest a link with the church. The dating of Tomb 1 was based on the objects found in the tomb. The fragmentary black ceramic vessel and broken glass goblet belong to the Byzantine period, i.e. 5th to late 7th century AD. A structure found on a plastered floor at the church's south-west corner, about 15 m south of Tomb 1 was later identified as a tomb (Tomb 3). The material inside it had deteriorated beyond recognition. Tombs 1 and 3 belong most probably to the same period, i.e. 6th or 7th century AD. Both burials can be thus associated with the nearby religious structure.

Tomb 2, Squares D5-E6

In August 2000 new squares were opened to the south-east of the main area. In Square E5, the corner of a stone-built structure was found, upon one side of which a pile of stones was arranged so as to line the distal parts of a human burial. The square's northern and eastern sec-

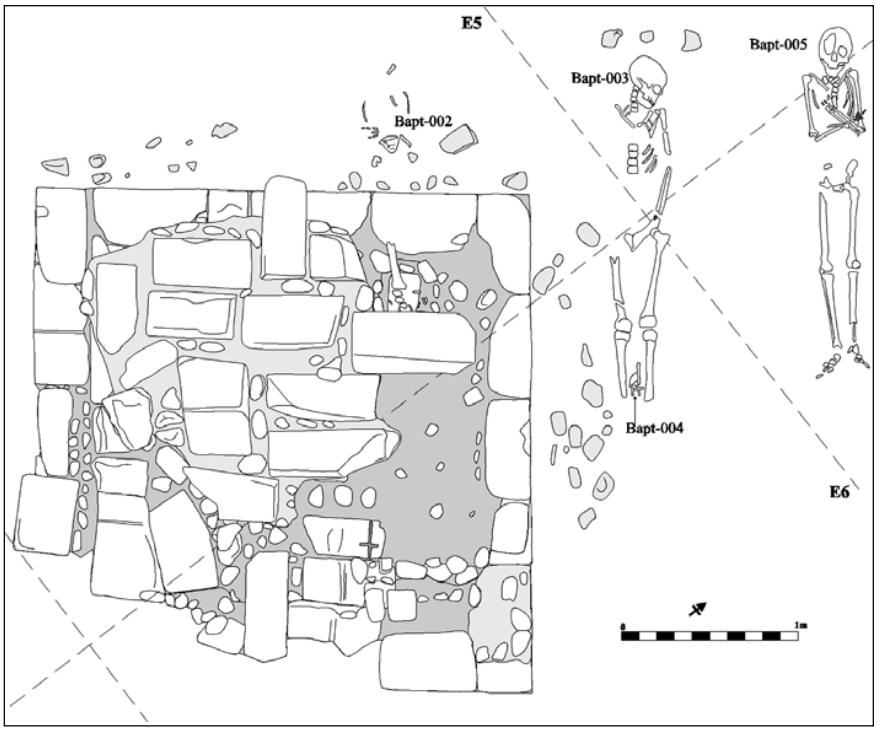


6. Lamina externa and interna of the frontal (A, B) and temporal (C, D) bones of Bapt-001: (f) fistula, (l) lesion.

tions revealed an upper (1 m thick) clay layer on top of a 100-130 cm fine sand layer, which was in turn above another clay layer. This stratigraphy differed from that observed elsewhere on the site where clay was recorded from top to bottom. Between the sand and lower clay layer were pieces of human bone, which indicated the presence of an ancient burial.

Excavation in Squares D5 to E6 resulted in the discovery of four burials: three adult and one child. The three adults (Bapt-002, Bapt-003 and Bapt-005) were buried parallel to each other in a fully extended position, with a 15° southern deviation from the west. The disarticulated remains of child (Bapt-004) were found between the legs of the middle adult (**Fig. 7**). This indicated that the tomb (Tomb 2) involved simultaneous multiple burials, despite the different positioning of the arms of Bapt-003 and Bapt-005. All burials were placed upon the clay layer and covered by sand (**Fig. 8**). In general the skeletal remains were in worse condition than those of Tomb 1, which might be attributed to the acidity and wetness of the muddy tomb floor. The material had a red-brown colour, likewise because of the presence of iron oxides. These conditions hampered recognition of the bones, which eventually led to partial material loss from Bapt-002 and Bapt-003 (**Figs. 7, 8**). The burials were excavated in the same manner as Bapt-001 described above.

Based on preliminary analysis, the extreme robustness of the right tibia and available feet bones suggested that Bapt-002 was an adult male, who died at an estimated age of less than 40 years, as indicated by ossification of the tibia. Pelvic as well as cranial features clearly identified the other three individuals as males. Tooth wear and pelvic traits suggested ages of 25-35 years for Bapt-003 and Bapt-005, while dentition and bone fusion indicated that Bapt-004 died at the age of 7-10 years. Pathological examination revealed the presence of lesions, variable in number, size and severity, on the lamina interna of the basal cranial fragments from all adult in-



7. Excavated burials in Tomb 2 with rectangular structure on left dotted line represents edge of square.

dividuals. This suggests a meningeal infection in all three, possibly similar to that of Bapt-001. However, it remains uncertain whether the infection was fatal. The remains of the child revealed lamellar bone formation on the long bone shafts and the lamina externa. Therefore, sepsis (general inflammation) was the probable cause of death in the child. The archaeological evidence suggests that all 4 individuals from Tomb 2 were buried simultaneously, while the preliminary pathological analysis suggests that all four individuals died from a lethal infectious disease.

The distal parts of Bapt-002 were located on a rectangular structure (*ca.* 280 cm) that was parallel to another similar structure located *ca.* 3 m distant in Square D4, upon which a small chapel was built with an apse on the same orientation as the burials. Both structures were solidly built of courses of dressed limestone, each course *ca.* 31 cm thick and, for some reason, tilted 5° eastwards. The cleaning of the structure in Square E5 / E6 revealed a stone with an engraved cross, 20 cm x 12 cm, and a two-word Arabic inscription (حكيم الله) on the second stone of the 7th course (now 3rd). The words were engraved in a much earlier time, before the inscription and structure as a whole was covered by meters of clay deposits. The sand layer was clean and homogenous. It extended from the chapel to the Bapt-002 grave and yielded two pottery fragments only. It appears that the sand layer was deliberately brought in to cover the burials. Pottery collected from the clay layers above and below the sand layer were similar and included Roman, Byzantine, and Fatimid fragments. This suggests that the burials in Tomb 2 date to some time between the 11th and 14th centuries AD. It also suggests a possible relationship between Tomb 2 and the nearby small church or chapel, and that both were associated with the religious site as a whole. Since 2002, the human material from this tomb has been inaccessible as it is on display in different churches throughout Jordan.

It seems clear that all of the five individuals found buried in the tombs were associated with religious structures in the area of the John the Baptist church. It appears that all were victims of infectious disease, a probable indicator of poor health conditions in the area. This may have been one of the factors that caused the site to be abandoned.

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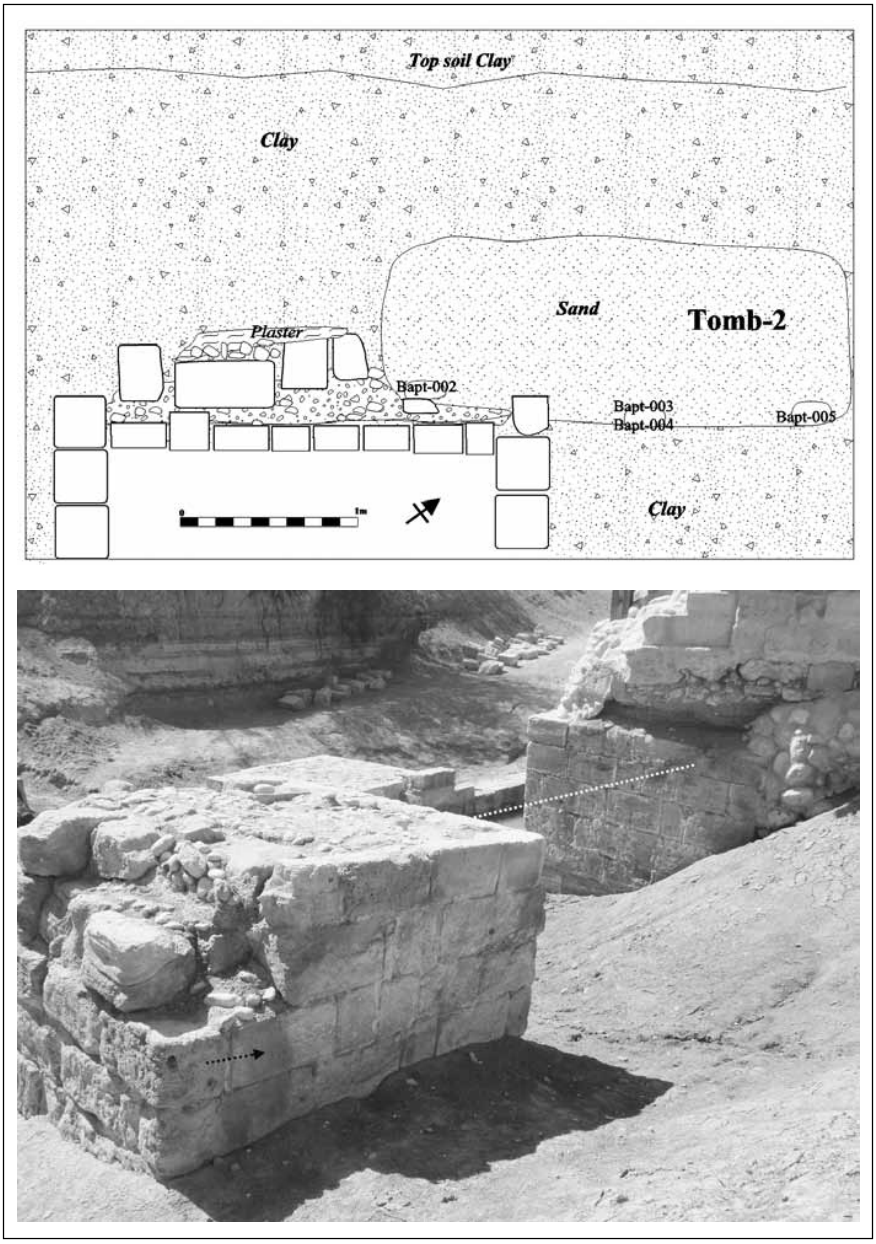

8. Tomb 2: North-south section drawing (top); present state of area of Tomb 2 (bottom). Dotted line marks level of burials. Arrow indicates position of Arabic inscription.

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